Q. DO U S WEST'S COST MODELS PROPERLY ATTRIBUTE INDIRECT EXPENSES ON THE BASIS OF CAUSALITY?

A. Yes. During the past year, my staff and I have worked with U S WEST to attribute a number of costs that were previously defined as shared and common costs to specific services. This process anticipated the FCC's requirement that "[a] properly conducted TELRIC methodology will attribute costs to specific elements to the greatest possible extent, which will reduce the common costs." In response to the FCC Order, I have continued to work with U S WEST to complete this process and bring U S WEST's cost models into compliance with the guidelines provided in the FCC Order. For example, U S WEST's switching cost model now attributes the market value of real estate and buildings used to house end office switches to the cost of end office switching.

Q. DO U S WEST'S COST STUDIES COMPLY COMPLETELY WITH THE COSTING RULES SET FORTH IN THE ORDER AND LISTED ABOVE?

A. I believe they do. U S WEST's cost studies may still understate the TELRIC of network elements in some instances where time has not permitted proper analysis to further reflect the expected impacts of competition and the FCC Order on realistic cost assumptions. Given the shortage of time to observe the impacts of competition and fully adapt to the FCC Order, it is my expectation that U S WEST's cost models underestimate the impacts of competition and the FCC's unbundling requirements on its: 1) fill factors; 2) economic rates of depreciation of network facilities; 3) risk-adjusted cost of capital.

Q. DO U S WEST'S MODELS USE REALISTIC ASSUMPTIONS ABOUT THE AMBIENT FIELD CONDITIONS UNDER WHICH CONSTRUCTION WOULD TAKE PLACE?

A. Yes. U S WEST's cost models are also predicated on sound engineering principles and recognize that the most efficient facilities will need to be installed in "real world" field conditions. It is not realistic to assume that the majority of facilities would be constructed under low cost conditions, such as trenching in open fields or using stand by capacity in preexisting structures such as poles and conduits, rather than under more difficult and expensive conditions. The real world is cluttered with houses, offices and streets, not open fields and vacant lots. To replace U S WEST's conduit today, much of the trenching and placement would entail breaking asphalt streets, boring under sidewalks, and digging through gardens and lawns.

Q. DO U S WEST'S MODELS USE REALISTIC ASSUMPTIONS ABOUT THE ENGINEERING ECONOMICS OF THE LOCAL EXCHANGE NETWORK?

A. Yes. U S WEST's models are all based on actual engineering plans and specifications for providing local exchange service and unbundled network elements. These specifications are based on U S WEST's experience in designing, building, maintaining and operating its local exchange network.

Q. DOES U S WEST USE FORWARD LOOKING OPERATING EXPENSES IN ITS TELRIC STUDIES?

A. Yes. U S WEST calculates its operating expenses for TELRIC studies by taking its embedded or current expenses and adjusting them so that only expenses which would be incurred to service or maintain forward looking technologies such as digital switching are included.

Q. DO U S WEST'S TELRIC COST MODELS INCLUDE THE COSTS OF UNBUNDLING?

A. Not entirely. They do include some of the investment costs required to unbundle loops provisioned using pair gain equipment. However, there are other costs of unbundling, which I mentioned on a general level earlier in my testimony. Not all of these costs are currently included in U S WEST's TELRIC models. In fact this is an area in which U S WEST's cost models are conservative and probably understate the cost of providing unbundled network elements.

Q. DO U S WEST'S TELRIC COST MODELS INCLUDE ANY EMBEDDED COSTS?

A. No. U S WEST's cost models only include forward looking costs.

Q. CAN YOU DESCRIBE YOUR INVOLVEMENT IN THE U S WEST COST MODELS?

A. I originally got involved with the U S WEST cost models at the end of 1995. The rapid emergence of local exchange competition was a major impetus for changing the engineering assumptions of the models to reflect competitive, rather than monopoly, supply conditions. My role in this effort was to advise U S WEST regarding the consistent application of economic principles. At this time, I conducted a conceptual review of the U S WEST cost models to help ensure that the models complied with the economic costing principles outlined in this testimony. During the course of this review, I found several areas of the models which needed to be and subsequently were revised. Of most significance was the understatement of the actual forward looking costs of outside plant which comprises the largest share of total plant investment. For example,

based on my review, U S WEST also adjusted their loop model's cost estimates for placing buried cable to reflect the real world conditions in which trenching and boring occur. Previously, U S WEST's cost models had assumed an unrealistically high proportion of loop placement occurred in undeveloped or rural environments and not in urban or suburban developed areas where placement is much more costly and inconvenient. Another important improvement was the attribution of "incremental" costs which were formerly, yet inaccurately, classified as "shared" or "common" to specific services. For example, many personnel and office equipment expenses were historically classified as overhead expenses or common costs, even if these costs were clearly incurred to produce specific network elements or services such as the local loop or tandem switching. Also, "stand-by" loop capacity was reclassified from a shared cost to an incremental cost associated with providing the local loop or dialtone access to the network. Another important change to the U S WEST cost models was an adjustment of the factors used for calculating operating expenses so that only forward looking operating expenses were included in the models. This is described in greater detail earlier in my testimony. After these changes were made the U S WEST cost models complied with the economic costing principles which define TSLRIC.

Q. DO U S WEST'S COST MODELS COMPLY WITH ECONOMIC COSTING PRINCIPLES OUTLINED EARLIER IN YOUR TESTIMONY?

A. From my detailed discussions with U S WEST modelers, I am comfortable on a conceptual level that the changes discussed in our working sessions have been properly considered. Members of my staff are working with U S WEST to evaluate its cost models and ensure that the principles and methods of cost estimation identified in our working meetings are properly represented in these models. I hasten to add, however, that the development of cost models is an evolutionary process, and I fully expect that the

changing technology, competitive conditions, and continued study of cost relationships will lead to further changes that will continuously improve the accuracy and reliability of these models.

Q. WERE YOU INVOLVED IN HELPING U S WEST TO REVISE THEIR TSLRIC MODELS TO COMPLY WITH THE FCC'S TELRIC METHODOLOGY?

A. Yes I was. After the FCC issued their local competition rulemaking, I met with U S WEST cost staff to help them turn their TSLRIC studies into TELRIC studies. As I explained earlier in the testimony, the major change from TSLRIC to TELRIC was that certain costs which are shared among services are causally attributable to specific unbundled network elements. For example, stand-by modular switching capacity is shared by switched access, local exchange, and intraLATA toll services but is causally attributable to the unbundled switching element. Thus, when costing elements, there are fewer shared costs than there are for services.

G. VALIDATIONS OF U S WEST COST STUDIES

Q. DO THE EMBEDDED COST STUDIES SUBMITTED BY U S WEST WITNESS DALLAS ELDER HELP TO VALIDATE U S WEST'S TELRIC STUDIES AS REASONABLE?

A. Yes. Because U S WEST's embedded costs represent actual expenses incurred to provide local telephone service, they provide one data point for helping to determine if U S WEST's cost models are reasonable. Embedded cost estimations may be higher or lower than TELRIC studies depending on how recently the embedded investments occurred, whether embedded costs were incurred on short notice to reinforce existing plant to meet unexpectedly high demand for service, the depreciation and cost of capital

used in the embedded studies, the price of land and buildings used in the embedded studies, the facilities placement and structure costs incurred when the network was originally deployed, and many other factors. Because of these potential differences between embedded and TELRIC studies, embedded cost studies should be used in conjunction with other factors to help evaluate the reasonableness of TELRIC studies.

Q. ARE THERE ANY OTHER FACTORS WHICH VALIDATE U S WEST'S COST ESTIMATES?

A. I can think of two strong validations or "sanity tests" for U S WEST's TELRIC estimates. First, other entrants are building facilities only in high density business centers, revealing that it is only cost effective to build competing loops in low cost high revenue areas. Second, U S WEST's TELRIC estimates are consistent with U S WEST's actual construction costs for newly installed access lines.

Q. WHERE ARE ENTRANTS BUILDING THEIR OWN FACILITIES-BASED LOCAL NETWORKS?

A. Perhaps the strongest evidence of the high cost of providing residential local loops and exchange service is that no entrant is building its own facilities to do so. Recall that TELRIC is based on forward-looking costs. Unless entrants claim that U S WEST is more efficient than they are, they should be able to build loops and provide basic exchange service for the same cost as U S WEST. Yet, virtually all entry into access and exchange services has occurred and is occurring in concentrated business districts, such as downtown Denver, where the cost of distribution plant is far less than the average cost of serving residential customers. In considering the arguments of entrants in this proceeding, the Commission should recall that "actions speak louder than words."

Q. ARE U S WEST'S ACTUAL CONSTRUCTION EXPENSES PER ACCESS LINE ADDED CONSISTENT WITH U S WEST'S TELRIC LOOP COST ESTIMATES?

A. Yes. Average construction expenses per line added also validate U S WEST's TELRIC estimates of loop costs.[67] For the company as a whole, the total average construction expenses per line added in 1995 was $1492.[68] If construction costs are deaveraged based on the ratio of the state TELRIC for Colorado to the region-wide average TELRIC, the construction expense per line added is $1161.14.[69]

VII. PRICING OF UNBUNDLED NETWORK ELEMENTS

A. U S WEST'S PRICING PROPOSAL FOR UNBUNDLED NETWORK ELMENTS

Q. DO YOU AGREE WITH THE FCC FINDING THAT PRICES SHOULD NOT INCLUDE ANY EMBEDDED COSTS?[70]

A. I do not. Under the "regulatory contract" LECs must be given an opportunity to earn a reasonable return on their investments and all of the costs they have incurred. During a transition period, these costs include a recovery of the embedded costs incurred to meet regulatory service obligations. Barring business assessment miscalculations, proper depreciation methodologies should assure that net book values do not exceed replacement

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[67] A line added is defined as a newly constructed access line, connected to the end office main distribution frame but not necessarily turned on and providing dial tone to a customer.

[68] This is based on an assumed fill factor of .6227, which is the fill associated with feeder cables for U S WEST on a company-wide basis. Similarly, total construction expenses per line gained (defined as net new access lines providing dialtone service to end user customers) was $1,661 in 1995.

[69] For the purposes of this calculation, a region-wide TELRIC of $33.37 per loop was used and a state-wide TELRIC of $25.97 was used. The ratio of these numbers was multiplied by the average total construction expenses per line added to get the deaveraged construction expense per line added.

[70] FCC Order, paragraph 705.

costs. However, U S WEST's embedded costs in Colorado include a depreciation reserve deficiency which was accrued because depreciation rates have been set at uneconomic levels by state and federal regulators who have consistently required that U S WEST use longer asset lives than it would have chosen for itself. These prescribed depreciation lives have resulted in accumulated "uneconomic" costs and potentially stranded investment.

Historically, U S WEST has functioned under an implicit regulatory contract with the states in which it operates. Under the terms of that contract, U S WEST has been responsible for fulfilling three obligations: serving as "carrier-of-last-resort," providing service on a "ready-to-serve" basis, and selling basic telephone service at geographically averaged prices to ensure affordability, whether or not the price of any given service to any given customer covers its cost. U S WEST has historically met its service standards and otherwise fulfilled its service obligations by investing hundreds of millions of dollars in the public telephone network of the fourteen states in its region. These investments were made not as the result of "independent business decisions," but in fulfillment of the aforementioned obligations. Not allowing U S WEST to recover embedded costs resulting from these investments would either deny U S WEST shareholders any reasonable prospect of earning an equitable return on those investments or would require that U S WEST recover these costs solely from its own end user customers even though competitors and their customers will benefit substantially from the investments which led to these embedded costs. Either alternative would therefore violate principles of equity and could undermine incentives for investment in infrastructure, reducing economic efficiency.

Q. PLEASE EXPLAIN HOW PUBLIC POLICY MAKERS IN THE ELECTRICITY INDUSTRY PERMITTED THE INCUMBENT UTILITY TO RECOVER ITS PAST INVESTMENT COSTS (I.E. EMBEDDED COSTS) DURING THE TRANSITION FROM A FRANCHISE MONOPOLY TO A COMPETITIVE ENVIRONMENT?

A. The Federal Energy Regulatory Commission (FERC) issued final rules to implement competition policies included in the National Energy Policy Act of 1992 (EPAct) less than three months after Congress passed the Telecommunications Act of 1996.[71] In EPAct, Congress established a national policy of open, nondiscriminatory access to the US electric transmission network for the purpose of creating a competitive wholesale market for electricity nationwide. Congress charged FERC with the task of implementing its open access competition policy.

In its final order implementing EPAct, FERC acknowledged explicitly that "...the electric industry's transition to a more competitive market is driven in large part by statutory and regulatory changes beyond the utilities' control."[72] FERC's acknowledgment reflects the fact that the dramatic changes proposed in its final rules were in significant part directly attributable to the explicit shift in national energy policy brought about by Congress through EPAct. FERC's conclusion certainly applies equally, if not more, to the telecommunications industry. The Telecommunications Act of 1996 eliminates ***all*** pre-existing legal barriers to entry into the local exchange. As such, the Telecommunications Act represents significantly more sweeping and dramatic changes compared to the relatively more modest steps taken by FERC, which EPAct forbids from extending

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[71] FERC Order No. 888, April 24, 1996.

[72] FERC Order No. 888, April 24, 1996, 75 FERC P61, 080, footnote 583.

competition beyond wholesale electric markets.[73] Yet, as I explain in more detail below, FERC recognized that even this comparatively more modest step required it to honor its obligations under the traditional regulatory contract, and sustain for the incumbent a reasonable opportunity to recover its costs and earn a fair return on its investment.

FERC recognized further that the policy-driven transition from a regulatory apparatus centered on the monopoly franchise and cost-of-service principles to one organized around competition would leave the incumbent with assets which–though used and useful under the traditional structure–would be left stranded in a competitive environment:

> ...the transition to a fully competitive bulk power market could cause some utilities to incur stranded costs...[A] utility may have built facilities...with the reasonable expectation that its customers would renew their contracts and would pay their share of long-term investments and other incurred costs. If the customer obtains another power supplier, the utility may have stranded costs. If the utility cannot locate an alternative buyer or somehow mitigate the stranded costs..."the costs must be recovered from either the departing customer or the remaining customers or borne by the utility's shareholders." Accordingly, the Commission proposed to establish provisions concerning the recovery of wholesale and retail stranded costs...[74]

Having thus acknowledged that the shift would likely impair the incumbent's ability to recover past investment costs, FERC determined unambiguously that the transition to

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[73] This is not to suggest that FERC's final rules establishing open access transmission in wholesale electricity do not represent a significant event in the history of the US electric industry, or that the task of doing so was anything less than monumental. Rather, it is simply a different proposition, with dramatically different consequences, to eliminate all legal barriers to entry than it is to bring competition to the wholesale market. EPAct's provisions do not prevent state regulatory commissions from introducing retail competition in electricity markets under their jurisdiction. The majority of states have established retail competition policies or are currently in the process of considering doing do.

[74] FERC Order No. 888, April 24, 1996, 75 FERC P61, 080, Part 1 at *55-56.

competition should not sacrifice the utility's opportunity to recover a return of and on past investment:

> [W]e do not believe that utilities that made large capital expenditures or long-term contractual commitments to buy power years ago should now be held responsible for failing to foresee the actions this Commission would take to alter the use of their transmission systems in response to the fundamental changes that are taking place in the industry...It was not unreasonable for the utility to plan to continue serving the needs of its...customers...and for those customers to expect the utility to plan to meet future customer needs. With the new open access, the risk of losing a customer is radically increased."[75]

Indeed, FERC determined that, together with non-discriminatory open access transmission service, "...stranded cost recovery [is] the most critical component of a successful transition to competitive wholesale electricity markets"[76]

For these reasons FERC established, *simultaneous with the enactment of its open access policy*. Under that policy, the incumbent would continue to face a reasonable opportunity to recover past investment costs left stranded "as a result of customers leaving the utility"–costs which the utility incurred "...under an entirely different regulatory regime..."[77]

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[75] FERC Order No. 888, April 24, 1996, 75 FERC P61, 080, Part 2 at *258

[76] FERC Order No. 888, April 24, 1996, 75 FERC P61, 080, Part 1 at *64

[77] FERC Order No. 888, April 24, 1996, 75 FERC P61, 080, Part 2 at *257

Q. HAVE STATE PUBLIC UTILITY COMMISSIONS ALSO ESTABLISHED POLICIES DESIGNED SPECIFICALLY TO PERMIT INCUMBENT ELECTRIC UTILITIES TO RECOVER PAST INVESTMENT COSTS AS PART OF THE TRANSITION TO COMPETITION IN THE ELECTRIC UTILITY INDUSTRY?

A. Yes they have. In one of the first initiatives to bring retail competition to the electricity industry, the California Public Utilities Commission, for example, has allowed for full recovery of costs incurred by the incumbent under the traditional regulatory framework. The California Commission did not, however, limit recovery to past capital investment. Recognizing that the incumbent electric utilities' financial obligations under the traditional regulatory framework extended beyond infrastructure investment, the Commission included in its recovery mechanism "...deferred operating expenses, deferred taxes, unamortized debt expense, costs associated with issuing or reacquiring debt,...nuclear decommissioning expenses..." and employee retraining and early retirement programs.[78]

In providing its reasons for allowing such recovery, the California Commission, like FERC, cited its obligations under the regulatory contract:

> Under the current regulatory structure, we have granted utilities monopoly franchises to provide electricity to the consumers in their service territories, and we have required utilities to provide reliable service on a nondiscriminatory basis to all customers within their territories...In fulfillment of these responsibilities, utilities developed a portfolio of generation assets by investing in power plants and entering into purchase agreements on the understanding...that reasonable costs would be recovered by rates. They also assumed various other responsibilities...and responded to specific regulatory or legislative mandates...[T]hese investments were found prudent at the time they were made and therefore

[78] California Public Utilities Commission Decision 95-12-063, as modified by 96-01-009, January 10, 1996, p. 128.

> they should be entitled to full recovery...We conclude that the utilities should be allowed to recover appropriate transition costs.[79]

In addition, the California Commission recognized the important effect that recovery of past investment costs could have on the utility's financial viability and network efficiency and reliability:

> [M]aintaining the financial integrity of the utilities is an important goal of this proceeding...Investors' uncertainty about the recovery of transition costs may harm the utility's ability to raise capital and may result in a higher cost of debt.[80]
>
> If the utilities were required to write off the entire amount of above-market levels of investments, they could face a financial disruption that might lead to lower system reliability and inefficient operation.[81]

More recently, the California Legislature passed and the Governor signed comprehensive legislation designed to introduce competition into California's retail electricity markets.[82] The Act, which in general terms affirmed the competitive course set by the California Commission, established as a matter of state policy allowance for the recovery of past investment:

> It is proper to allow electrical corporations an opportunity to continue to recover, over a reasonable period, those costs and categories of costs for generation-related assets and obligations, including costs associated with any subsequent renegotiation or buyout of the existing generation-related contracts that the commission, prior to December 20, 1995, had authorized for collection in rates and that may not be recoverable in market prices in a competitive generation market, and appropriate additions incurred after December 20, 1995, for capital additions to generating facilities existing as

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[79] California Public Utilities Commission Decision 95-12-063, as modified by 96-01-009, January 10, 1996, p. 114.

[80] California Public Utilities Commission Decision 95-12-063, as modified by 96-01-009, January 10, 1996, p. 115.

[81] California Public Utilities Commission Decision 95-12-063, as modified by 96-01-009, January 10, 1996, p. 115.

[82] California Assembly Bill No. 1890, as signed by Governor, September 23, 1996.

> of December 20, 1995, for capital additions to generating facilities existing as of December 20, 1995, that the commission determines are reasonable and should be recovered, provided that the costs are necessary to maintain those facilities...[83]

Moreover, the Legislature set a specific timeline for cost recovery–approximately five years–and called on the California Commission to establish a "non-bypassable Competition Transition Charge" to ensure that market participants could not evade contributing their fair share to cost recovery, thereby shifting cost responsibility to others.[84]

Q. IS THE REGULATORY CONTRACT AND RECOVERY OF PAST INVESTMENTS COSTS UNDER THE CONTRACT WIDELY RECOGNIZED AND SUPPORTED BY OTHER EXPERTS?

A. Yes, they are. For example, Sidak and Spulber describe the regulatory contract this way:

> The regulated utility submits to various regulatory restrictions including price regulations, quality of service requirements and common carrier regulations. In return, the regulated firm receives an exclusive franchise in its service territory and its investors are allowed an opportunity to earn revenues subject to rate of return constraints.[85]

Noted economist Irwin Stelzer defines it in a similar fashion:

> First, in return for a monopoly franchise, utilities accepted an obligation to serve all comers. Second, in return for agreeing to commit capital to the

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[83] California Assembly Bill No. 1890, as signed by Governor, September 23, 1996, Chapter 2.3, Article 1, Section 330 (s).

[84] California Assembly Bill No. 1890, as signed by Governor, September 23, 1996, Chapter 2.3, Article 1, Section 330 (v).

[85] J. Gregory Sidak and Daniel F. Spulber, Deregulatory Takings and the Regulatory Contract, Conference Paper: Economic and Constitutional Perspectives on Takings, American Enterprise Institute, March 7, 1996, p. 38.

> business, utilities were assured a fair opportunity to earn a reasonable return on that capital.[86]
>
> Investors committed their capital, and the companies in turn have undertaken the very large investments and contractual commitments to fulfill their various public service obligations and have accepted regulatory limitations on their allowable rates of return in exchange for the promise of a reasonable opportunity to recover their prudently incurred costs.[87]

Baumol and Sidak go further, asserting that failure to permit recovery of past investments would explicitly run afoul of the contract's tenets:

> [It is what] we call the implicit regulatory compact...that enabled regulators to reconcile their earnings ceilings with a rate of return high enough to compete in capital markets. Failure to allow recoupment of stranded costs will clearly violate this implicit regulatory compact.[88]

Moreover, in testimony filed on behalf of the Edison Electric Institute in response to FERC's proposed rules to establish competition in wholesale electric markets, economists Baumol and Kahn argue that 1) fairness dictates the recovery of past investment as part of the transition, and 2) competition would suffer absent such recovery:

> Any regulatory preclusion of incumbent electric companies recovering their stranded or potentially strandable costs can be deleterious to economic efficiency as well as unfair, and." [89]
>
> Reconciling the recovery of strandable costs with efficient competition is properly regarded as a problem primarily of the transition ...During that transition,...the incorporation of those costs, unique to the incumbent

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[86] Irwin M. Stelzer, "The Utilities of the 1990s", The Wall Street Journal, January 7, 1987, in Charles F. Phillips, Jr., The Regulation of Public Utilities, Public Utilities Reports, Inc., Arlington, VA, 1988, p. 21.

[87] William J. Baumol and J. Gregory Sidak, Transmission Pricing and Stranded Costs in the Electric Power Industry, American Enterprise Institute, Washington, D.C., 1995, p. 107.

[88] "Pay Up or Mark Down", William Baumol and J. Gregory Sidak, *Public Utilities Fortnightly*, p. 22.

[89] EEI Reply Comments before FERC, Docket Nos. RM95-8-000/RM94-7-002, "Economic Efficiency, Competition and Limiting the Exercise of Market Power", William Baumol and Alfred Kahn, p. A-2.

> utility companies, in their prices is a major source of distortion of competition, unless some method for their recovery is devised that equalizes those burdens.[90]
>
> The only way to eliminate...inefficiency is to ensure that the charges to all purchasers, whether shifting or remaining with their local utility supplier, make the same proportional contribution to the recovery of those costs: in that event the free choices of buyers will be guided solely by the relative real costs of the rivals. ...[I]t is not anticompetitive to use the price of transmission as a means of recovering [the costs].[91]
>
> Some might argue that stranded cost recovery is unfair or that it would introduce an inefficient bias against the entrants. This position is unfounded. The purpose and effect of the charge would be to make certain that all purchasers continue to bear equally the costs that were incurred by the local utilities in order to serve them.[92]

Finally, Baumol and Kahn point to the negative effects failure to permit cost recovery would have on capital markets, and hence on the vital infrastructure on which society and the economy depend:

> [There are]...hazards of changing the rules of the game under regulation: a decision by regulators no longer to allow recovery by investor-owned utilities of historically incurred costs to which they had reason to believe they were entitled may well impede efficiency by reducing the willingness of investors henceforward to supply to the industry the funds that efficiency would require be devoted to modernization, maintenance or expansion of plant and equipment.[93]

Q. DO THE U S WEST TELRIC COST STUDIES SUBMITTED IN SUPPORT OF ITS INTERCONNECTION PRICES INCLUDE ANY EMBEDDED COSTS?

A. No, as I explained earlier, they do not.

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[90] *Ibid.*, p. A-12.

[91] *Ibid.*, p. A-2, A-13.

[92] *Ibid.*

[93] *Ibid.*, p. 7.

Q. DO U S WEST'S PROPOSED PRICES FOR UNBUNDLED NETWORK ELEMENTS RECOVER ANY EMBEDDED COSTS?

A. Yes. As explained in the testimony of U S WEST witness Frank Hatzenbuehler, the tandem and local switching prices contain a rate element which recovers a prorated share of the depreciation reserve deficiency.[94] As I stated above, U S WEST should be allowed to recover prudently incurred embedded costs in its prices for unbundled network elements. One important example of these costs is the depreciation reserve deficiency. This deficiency is defined as the difference between the amount of previously accumulated depreciation actually recorded on a company's regulated books (according to prescribed depreciation lives) and the amount of depreciation that should have been booked to the reserve if current estimates of economic lives had been the basis for depreciation entries all along. Because U S WEST made many of its investments under "carrier of last resort" and "ready to serve" obligations mandated by state regulators, and regulators have historically prevented U S WEST from recovering these costs using economically appropriate depreciation rates, U S WEST must therefore be allowed to recover these costs before competition makes it impossible to recover them.[95] If U S WEST was forced to recover these costs entirely from its own end user retail customer base, U S WEST would be in a substantial competitive disadvantage *vis-à-vis* new entrants in retail markets. In response to the stay, U S WEST has altered its pricing

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[94] Another way to look at this proposal is that the intrastate depreciation reserve deficiency would be allocated over a five year period to total intrastate minutes of use (by end user customers of U S WEST or by new entrants and their end user customers) on U S WEST tandem and end office switches. New entrants would only pay a prorated share of costs based on their proportion of total switching minutes used.

[95] Once facilities-based competition increases in local exchange markets, U S WEST will not be able to recover depreciation expenses which were incurred and should have been recovered in the past. If U S WEST tries to recover these historic costs in its forward looking rates, customers will simply switch to competitors who do not have to recover these legacy costs.

proposal for unbundled network elements to include a mark-up or additional rate element for tandem and local switching to help recover the depreciation reserve deficiency. In my opinion, this proposal is a reasonable way to help recover U S WEST's depreciation reserve deficiency from new entrants and their end user customers as well as U S WEST end users, all of whom will benefit from the investments U S WEST has made in its network.

B. NEW ENTRANTS' PROPOSALS FOR PRICING UNBUNDLED NETWORK ELEMENTS

Q. BASED ON YOUR PARTICIPATION IN THE ARBITRATION PROCEEDINGS, WHAT DO YOU EXPECT AT&T AND MCI TO ARGUE WITH RESPECT TO THE PRICING OF UNBUNDLED NETWORK ELEMENTS?

A. I believe AT&T and MCI will argue that prices should be set at TELRIC and that the Hatfield Model provides the correct estimate of TELRIC.[96]

Q. DO YOU AGREE WITH THESE PROPOSALS?

A. No. I explained earlier that the assumptions and inputs in the Hatfield Model are fatally flawed and should not be accepted as a reasonable estimate of TELRIC. Further, I believe that the price for unbundled network elements should be based on, not set at, TELRIC. There are additional costs, apart from incremental costs, that must be recovered if a firm is to remain in business. I agree with the FCC Order which states that costs which are incremental to providing network elements or telecommunications services

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[96] See Direct Testimony of Robert Glenn Hubbard On Behalf of AT&T Communications of the Mountain States, Inc., p. 25: "the Hatfield model...presents a practical empirical approach to cost measurement that can reliably be used to approximate the TSLRIC of unbundled network elements." See Section VI.A for a comparison of TSLRIC and TELRIC.

should be attributed to the greatest extent possible to the appropriate elements or services on the basis of cost causality, thereby reducing the size of the common cost pool. However, there are still shared and common costs, which are part of the legitimate, forward looking economic costs that must be recovered by an efficient firm to stay in business. In many industries, including network industries, there are substantial economies of scale and scope that significantly improve production efficiency. In local telephone service provision, certain classes of infrastructure – such as conduit and poles and operating systems, and the technical and managerial human capital that is shared among many different network elements and services – are sources of scale economies. Not all of these costs are included in the calculation of element specific incremental cost. That is, the sum of the TELRICs for all elements is less than the total of U S WEST's costs of providing network elements or telecommunications services in the most efficient manner (i.e., by sharing infrastructure and resources across elements and services).

Marking prices up from incremental cost to recover shared and common costs (or allocating these costs) is practiced universally in all competitive industries, not just regulated utilities. I have studied many industries[97] through my experience in academics and consulting; in all of those industries I have observed prices marked up above service or element specific incremental cost. This is true even when a company which offers a

[97] I have studied transportation services (airlines, motor carriers, package delivery services, taxi services, railroads, Great Lakes barge and port services); distribution services (wholesale/retail sales of groceries, cellular phones, auto tires, hair care products, consumer electronics, video games and game players, musical instruments, and recreational vehicles parts and accessories); financial, insurance and real estate services (workers' compensation insurance, credit card services to member banks and merchants, retail rental space in regional shopping centers, agricultural crop loans); health care services (vision care benefits plans, optical and ophthalmic goods and services); manufactured products (semiconductors, semiconductor manufacturing equipment, biotechnology manufacturing equipment, corrugated steel products, electronic lighting products, chemical lighting products); entertainment and publishing (movie production, distribution and exhibition, magazine publishing, cable TV distribution of live events, live events ticketing services); and construction services (specialty steel fabrication, furnace pipe and fittings, electrical contracting, disaster recovery and cleanup services).

product or service for retail sale also offers that product on a wholesale basis to "resellers," or independent contractors.

Consider two examples. Chevron is a vertically integrated petro-chemical manufacturer that retails gasoline under its own brand name and also wholesales it to independent gas stations at a discount off its retail price. However, this discounted wholesale price is still marked up over incremental cost to help Chevron cover its shared and common costs. If it was not, then Chevron could never compete on price terms with the independent reseller because the reseller would always be able to under price Chevron.[98] Moreover, it would be unfair to Chevron's retail customers to require them to pay all of the common costs of gasoline refining and distribution while independent station managers pay none of these costs. Secondly, the computer chip manufacturer, Intel, sells its Pentium chips on both a retail level (bundled with the personal computers it manufacturers under contract for retailers) and a wholesale level (to unaffiliated manufacturers of personal computers). Pentium chips are sold to resellers at a price mark-up to provide contributions to Intel's total costs, including shared and common costs, and do not merely recover the incremental costs of the chip.

Finally, as I explained above, during the transition to competition U S WEST is entitled to a reasonable opportunity to recover its prudently incurred embedded costs, such as the depreciation reserve deficiency. These costs should be included in the prices for unbundled network elements.

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[98] For a detailed discussion of the vertical integration in the petroleum industry see David J. Teece, "Vertical Integration in the U.S. Oil Industry," American Enterprise Institute for Public Policy Research, Washington, D.C. (1978).

VIII. RESTRICTIONS ON RESALE OF SERVICES AND THE AVOIDED COST WHOLESALE DISCOUNT

Q. WHAT IS THE WHOLESALE PRICING STANDARD SPECIFIED IN THE ACT?

A. The Telecommunications Act of 1996 establishes a pricing standard for wholesale rates for resold services in Section 252(d)(3):

> **Wholesale prices for telecommunications services**: For the purposes of Section 251(c)(4), a State commission shall determine wholesale rates on the basis of retail rates charged to subscribers for the telecommunications service requested, excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier.

Hence, the Act requires that wholesale prices be set by subtracting "costs that will be avoided" from the retail prices of U S WEST. The purpose of this wholesale pricing rule is to allow resellers to compete with ILECs in the retailing of local exchange services by enabling them to buy those services at discount that reflects the avoided cost of retailing. (At this point in my testimony, I had planned to discuss why the FCC's avoided cost discount was economically incorrect. This discussion has been moved into the appendix to reflect the recent appeals court decision staying the FCC's proxy prices)

Q. IF AVOIDED COST DISCOUNTS ARE SET AT UNECONOMICALLY HIGH LEVELS AND WHOLESALE PRICES AT UNECONOMICALLY LOW LEVELS, WILL THIS HARM FACILITIES-BASED COMPETITION?

A. Yes. As is the case for unbundled network elements, when new entrants decide whether to "build or buy" local exchange service, if they can "buy" service for resale at prices well below the cost they would incur to "build" their own facilities-based service, they will choose the resale option. If the wholesale price is set too low because the avoided cost

discount was set too high or the discount was applied to already discounted rates, even carriers who could provide facilities-based service at a lower cost than the LEC would likely chose to be resellers, reducing economic efficiency. Such "buy" decisions will lead to competition occurring primarily in the retailing and marketing sides of the business and not in the actual production sides since both the LEC and the reseller will be using identical underlying facilities and technology to provide service.

Q. WHAT RESTRICTIONS ON RESALE OF DISCOUNT-PRICED SERVICES ARE ALLOWED UNDER THE FCC ORDER?

A. According to the FCC Order, the avoided cost wholesale discount must be provided to all end user rates, except for certain short term promotional offerings.

> Section 251(c)(4) provides that incumbent LECs must offer for resale at wholesale rates "any telecommunications service" that the carrier provides at retail to noncarrier subscribers. This language makes no exception for promotional or discounted offerings, including contract and other customer-specific offerings. We therefore conclude that no basis exists for creating a general exemption from the wholesale requirement for all promotional or discount service offerings made by incumbent LECs.[99]

This means that resellers will be able to get two discounts on some services: the volume discount given to end users and the FCC Order's avoided cost discount.

[99] FCC Order, paragraph 948.

Q. DOES THE FCC ORDER ALLOW INCUMBENT LECS TO REQUIRE RESELLERS' END USER CUSTOMERS TO INDIVIDUALLY COMPLY WITH VOLUME COMMITMENTS IN LECS' VOLUME-DISCOUNTED SERVICE OFFERINGS?

A. Individual resellers' end user customers can be aggregated together to get volume discounts. According to the FCC Order,

> it is presumptively unreasonable for incumbent LECs to require individual reseller end-users to comply with incumbent LEC high-volume discount minimum usage requirements, so long as the reseller, in aggregate, under the relevant tariff, meets the minimal level of demand.[100]

Q. IS IT APPROPRIATE FOR A RESELLER TO PURCHASE ALL OF ITS (AGGREGATED) USAGE AT A DISCOUNT FROM THE VOLUME DISCOUNTED PRICE?

A. No, it is not. Volume discounts already reflect retail cost savings passed on to high volume wholesale customers. Applying an additional avoided cost discount on top of the volume discount would amount to inappropriate or redundant "double-discounting." Double-discounting would occur whenever the avoided cost wholesale price discount is applied not to the regular retail price (such as the 1FR and 1FB), but to discounted retail prices or individual customer contract prices. For example, under double discounting, the Colorado National Bank received a discount off the normal rates for local exchange service in exchange for a term and volume commitment to U S WEST, U S WEST would have to offer the same price and terms to resellers, with the avoided cost wholesale discount applied on top of the existing term and volume discount.

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[100] FCC Order, paragraph 953.

Q. IS DOUBLE-DISCOUNTING OBSERVED IN COMPETITIVE INDUSTRIES?

A. No. The FCC's requirement that the discount be applied to all retail rates, including already discounted volume or term rates is wholly inconsistent with pricing practices used in competitive industries. For example, SONY sells its televisions through its own retail stores, independent retail stores, and directly to large volume end users, such as hotel chains. The wholesale price for a given volume of units would be approximately the same, whether it is Holiday Inn buying 100,000 units for its hotel rooms or Circuit City buying 100,000 units to resell at its retail stores. This wholesale price is obviously lower than the retail price of the product at either a SONY store or a Circuit City, and one could reasonably refer to the difference as a "wholesale discount."[101] However, SONY's wholesale price to Circuit City is decidedly NOT a double discount: i.e., the SONY price to Holiday Inn (an end user) minus the "wholesale discount."

Q. DO IXCS OFFER A WHOLESALE DISCOUNT TO RESELLERS OFF OF THEIR VOLUME DISCOUNT RETAIL OFFERINGS?

A. They do not. IXCs do not even offer wholesale prices to resellers. Rather, Sections 201 and 202 of the Communications Act prohibit facilities-based carriers from discriminating against purchasers, i.e., they may not impose restrictions on the resale of their services. Hence, if a reseller is willing and able to meet the same terms and volume commitments of a large end user, then it is eligible to buy under the same special contract tariff. The reseller does not receive any additional discount. By buying at the discounted price for a large volume, long-term commitment, the reseller is already receiving a discount that reflects the avoided costs of selling in bulk to large customers over the much higher per unit costs of selling to end users who buy much smaller volumes.

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[101] Indeed, wholesale prices are very often stated as a percentage discount off the "manufacturer's suggested retail price."

Q. WILL DOUBLE-DISCOUNTING HARM U S WEST'S ABILITY TO COMPETE FOR HIGH VOLUME CUSTOMERS?

A. Yes. High volume consumers of telecommunications services like large corporations are sophisticated consumers who will recognize that under the resale-wholesale pricing provisions in the FCC's Order, as soon as U S WEST signs an agreement to provide a term or volume discount to an end user, a reseller will automatically be able to get that same discounted price minus the avoided cost discount provided for in the FCC's Order. Large end user customers will not want to sign agreements directly with U S WEST if they can share in the additional "avoided cost" discount U S WEST is required to offer resellers. Resellers will then be able to capture the vast majority of the high volume market. Ultimately such policies will make local exchange markets more rigid and less efficient by reducing U S WEST's incentives to provide term or volume discounts to high volume customers.

Q. HAVE OTHER STATE REGULATORY COMMISSIONS RECOGNIZED THAT DOUBLE DISCOUNTING WILL HARM LOCAL EXCHANGE CARRIERS?

A. Yes. According to the California Public Utilities Commission's recent draft decision in the arbitration between Pacific Bell and AT&T:

> A new entrant to California's local telecommunications market is already offering to targeted customers a $24.95 monthly rate with unlimited calling. If Incumbent were to offer such a discount in order to meet this market price, arbitrator's reasoning would permit Entrant, AT&T, to purchase unlimited calling for $24.95 a month (less the 17 percent mandated discount). AT&T could then resell to millions of customers this $24.95 service (less the 17 percent discount) by aggregating their calling volumes to a single AT&T account. Clearly, the new resale obligations